



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/643,816	08/18/2003	Jean-Aicard Fabien	CE11375R	4784

23330 7590 08/22/2005

MOTOROLA, INC.
LAW DEPARTMENT
1303 E. ALGONQUIN ROAD
SCHAUMBURG, IL 60196

EXAMINER

FOX, BRYAN J

ART UNIT	PAPER NUMBER
----------	--------------

2686

DATE MAILED: 08/22/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/643,816

Applicant(s)

FABIEN ET AL.

Examiner

Bryan J Fox

Art Unit

2686

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 August 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-34 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6 and 8-34 is/are rejected.
- 7) ☒ Claim(s) 7 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- 1) ☐ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 8/18/03.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

Claim 12 is objected to because of the following informalities: it is unclear whether the word "usually" is intended to limit the claim. Appropriate correction is required.

Claim 12 is objected to because of the following informalities: all of the variables in the equation are not defined. Appropriate correction is required.

Claim 20 is objected to because of the following informalities: all of the variables in the equation are not defined. Appropriate correction is required.

Claim 21 is objected to because of the following informalities: all of the variables in the equation are not defined. Appropriate correction is required.

Claim 24 is objected to because of the following informalities: all of the variables in the equation are not defined. Appropriate correction is required.

Claim 26 is objected to because of the following informalities: it is dependent upon itself. Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1 and 2 are rejected under 35 U.S.C. 102(e) as being anticipated by Chen et al (US 20030134655A1).

Regarding **claim 1**, Chen et al disclose a power control method in a point-to-multipoint service (see paragraphs 22-23), which reads on the claimed, "power allocation and user assignment method for multimedia broadcast multicast services in a mobile communication system." There may be a field indicating the strength or quality of both the forward link broadcast channel and the pilot channel (see paragraph 81), which reads on the claimed, "transmitting a pilot signal to a plurality of user equipments." The sector adjusts the forward link shared channel to satisfy the power requirement of the subscriber station which reports the worst forward link quality metric (see paragraph 66), which reads on the claimed, "sorting each of the plurality of user equipments by a strength of the pilot signal." A user accesses the system via an access probe, and base stations transmit the received information on a forward shared channel to the users in the group that are assigned to monitor the channel (see paragraphs 49-51), which reads on the claimed, "determining a number of a particular user equipment of the plurality of user equipments to support on a broadcast channel; and assigning a portion of the plurality of user equipments, one through k, to the broadcast channel."

Regarding **claim 2**, Chen et al disclose that a control unit may be located at the individual sector or at the controller and determines the transmit level (see paragraph 65), which reads on the claimed, "the steps of transmitting, sorting, determining a number and assigning are performed by a radio network controller of the mobile communication system."

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 3-5 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chen et al in view of what was well known in the art (see MPEP 2144.03).

Regarding **claim 3**, Chen et al disclose that a control unit may be located at the individual sector or at the controller and determines the transmit level (see paragraph 65) and the quality information may be the signal strength or quality of both the pilot channel and the forward link broadcast channel. Chen fails to expressly disclose using a signal/noise ratio of the pilot signal.

The examiner takes official notice that it was well known in the art at the time of the invention to use the signal/noise ratio of the pilot signal.

It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify Chen et al to use the signal to interference and noise ratio of the pilot signal in order to use specify the quality metric of the pilot signal to use.

Regarding **claim 4**, as applied to claim 3, Chen et al further disclose that each sector receives feedback information from the member subscriber stations in the sector's coverage area and adjusts the transmit level to ensure that the desired quality of service is delivered to all the member subscriber stations by determining the transmit level (see paragraph 65), which reads on the claimed, "determining an area coverage threshold corresponding to the number K of the particular user equipment based upon location and channel conditions of the particular user equipment within a cell of the mobile communication system," wherein determining the transmit level directly determines the area coverage threshold.

Regarding **claim 5**, as applied to claim 3, Chen et al further disclose that each sector receives feedback information from the member subscriber stations in the sector's coverage area and adjusts the transmit level to ensure that the desired quality of service is delivered to all the member subscriber stations by determining the transmit level, and this can be done by a control unit located at the controller (see paragraph 65), which reads on the claimed, "determining by the RNC a coverage area within the cell for the MBMS services."

Regarding **claim 14**, Chen et al fails to expressly disclose that the transmitting, sorting, determining a number and assigning are performed prior to providing MBMS services by the RNC.

The examiner takes official notice that performing these functions at the RNC was well known to a person of ordinary skill in the art at the time of the invention.

It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify Chen et al to include the above functions performed at the RNC in order to save resources at the base station.

Claims 6 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chen et al in view of what was well known in the art, and further in view of Kitazawa et al (US20020037729A1).

Regarding **claim 6**, Chen et al fail to expressly disclose the step of sorting includes the step of sorting by the RNC the plurality of user equipments by the strength of the S/N of the pilot signal from a strongest pilot signal to a weakest pilot signal.

In a similar field of endeavor, Kitazawa et al disclose a system that sorts the mobiles by the order of the receiving signal-to-noise ratio to determine an assignment order (see paragraph 67).

It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify Chen et al with Kitazawa et al to include the above sorting by S/N of the pilot signal in order to preferentially communicate data to devices with better quality and raise throughput as suggested by Kitazawa et al (see paragraph 17).

Regarding **claim 8**, Chen et al discloses assigning users to the broadcast channel (see paragraph 50). Chen et al fails to disclose assigning each of the plurality

of user equipments ranked 1 through k by the strength of the pilot signal beginning with the strongest pilot signal.

In a similar field of endeavor, Kitazawa et al disclose a system that sorts the mobiles by the order of the receiving signal-to-noise ratio to determine an assignment order (see paragraph 67).

It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify Chen et al with Kitazawa et al to include the above assigning in order to preferentially communicate data to devices with better quality and raise throughput as suggested by Kitazawa et al (see paragraph 17).

Claims 9-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chen et al in view of what was well-known in the art and Kitazawa et al as applied to claim 8 above, and further in view of Sinnarajah et al.

Regarding **claim 9**, the combination of Chen et al and Kitazawa et al fails to disclose determining whether a total number of the plurality of user equipments requesting MBMS service is greater than K; and if the total number is greater than K, assigning by the RNC user equipments K+1 through the total number of the plurality of user equipments to dedicated channels.

In a similar field of endeavor, Sinnarajah et al disclose a system where when a station travels outside the range of a base station providing the content to a number of subscriber stations, another base station provides the content over an individual channel (see paragraphs 87-90), which reads on the claimed, "determining by the RNC

whether a total number of the plurality of user equipments requesting MBMS service is greater than K ; and if the total number is greater than K , assigning by the RNC user equipments $K+1$ through the total number of the plurality of user equipments to dedicated channels,” wherein the number of subscriber stations at the original base station is K and the subscriber at the new base station on an individual channel is $K+1$.

It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify the combination of Chen et al and Kitazawa et al with Sinnarajah et al to include the above use of shared and individual channels in order to conserve power as suggested by Sinnarajah et al (see paragraph 86).

Regarding **claim 10**, the combination of Chen et al and Kitazawa et al discloses that a control unit may be located at the individual sector or at the controller and determines the transmit level (see Chen et al paragraph 65). The combination of Chen et al and Kitazawa et al fails to expressly disclose setting a new area coverage threshold corresponding to the S/N of the pilot signal of the number K of the particular user equipment.

In a similar field of endeavor, Sinnarajah et al disclose that a base station receives a pilot strength report message indicating that the subscriber station is receiving stronger signals from another base station and the new base station provides the broadcast information while the old base station stops transmission (see paragraphs 96-98), which reads on the claimed, “setting a new coverage threshold,” wherein the broadcast being provided in a new area or not being provided in an old area implies the coverage has changed.

It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify the combination of Chen et al and Kitazawa et al with Sinnarajah et al to include the above changing of the coverage area in order to conserve power as suggested by Sinnarajah et al (see paragraph 86).

Regarding **claim 11**, the combination of Chen et al, Kitazawa et al and Sinnarajah et al discloses that the base station periodically decreases the forward link shared channel transmit power level by a first amount if the sector does not receive a feedback message from a member subscriber requesting power increase (see Chen et al paragraph 82), which reads on the claimed, "maintaining a power of the broadcast channel less than a maximum power allocated to the broadcast channel for MBMS services by a network operator."

Regarding **claim 12**, the combination of Chen et al, Kitazawa et al and Sinnarajah et al inherently provides support for the power available being the maximum power less the power allocated to the subscribers as a person of ordinary skill in the art would recognize that there is a limit to the amount of power a base station can produce and the maximum power would be equal to the power used plus the power available.

Regarding **claim 13**, the combination of Chen et al, Kitazawa et al and Sinnarajah et al disclose the transmit level is controlled based on feedback from the users (see Chen et al paragraph 65), which reads on the claimed, "transmitting the new area coverage threshold to the plurality of user equipments," wherein changing the transmit level of the base station changes the area coverage threshold.

Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sinnarajah et al (US 20040203336A1) in view of Yano et al (US005870393A).

Regarding **claim 15**, Sinnarajah et al disclose that a base station receives a request from a subscriber station to continue receiving the same broadcast content (see paragraph 90), which reads on the claimed, "power allocation and user assignment method for multimedia broadcast multicast services in a mobile communication system," and, "during an MBMS broadcast, requesting, by one user equipment of a plurality of user equipments, connection to the MBMS broadcast." The base station connects the subscriber unit to either a shared broadcast channel or an individual broadcast channel in order to conserve power, for example (see paragraph 86), which reads on the claimed, "if a first power for a dedicated channel is less than a second power for a broadcast channel, assigning by the RNC the one user equipment to the dedicated channel; and if the second power of the broadcast channel is greater than or equal to the first power of the dedicated channel, assigning the one user equipment by the RNC to the broadcast channel." Sinnarajah et al disclose transmitting a power strength report message from the subscriber station (see paragraph 96), however, Sinnarajah et al fail to expressly disclose transmitting a signal/noise of a pilot signal by the one user equipment to the mobile communication system.

In a similar field of endeavor, Yano et al disclose a terminal measuring the signal-to-noise ration on the basis of the received power of the pilot signal and transmitting this to the base station (see column 9, lines 36-47).

It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify Sinnarajah et al with Yano et al to include the above use of the signal-to-noise ration of the pilot signal in order to assure the communication quality of each terminal as suggested by Yano et al (see column 6, lines 9-36).

Claims 16-22, 24 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sinnarajah et al in view of Yano et al as applied to claim 15 above, and further in view of Chen et al.

Regarding **claim 16**, the combination of Sinnarajah et al and Yano et al fails to expressly disclose that the steps of transmitting, assigning and assigning are performed by a radio network controller of the mobile communication system.

In a similar field of endeavor, Chen et al disclose that a control unit may be located at the individual sector or at the controller and determines the transmit level (see paragraph 65), which reads on the claimed, "the steps of transmitting, assigning, and assigning are performed by a radio network controller of the mobile communication system."

It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify the combination of Sinnarajah et al and Yano et al with Chen et al to include the above steps performed at the RNC in order to save resources at the base station.

Regarding **claim 17**, the combination of Sinnarajah et al, Yano et al and Chen et al discloses the base station connects the subscriber unit to either a shared broadcast

channel or an individual broadcast channel in order to conserve power, for example (see paragraph 86), which reads on the claimed, "determining by the RNC the first power required for the one user equipment on the broadcast channel."

Regarding **claim 18**, the combination of Sinnarajah et al, Yano et al and Chen et al discloses the base station connects the subscriber unit to either a shared broadcast channel or an individual broadcast channel in order to conserve power, for example (see paragraph 86), which reads on the claimed, "determining by the RNC the second power required for the one user equipment on the dedicated channel."

Regarding **claim 19**, the combination of Sinnarajah et al, Yano et al and Chen et al discloses the base station connects the subscriber unit to either a shared broadcast channel or an individual broadcast channel in order to conserve power, for example (see paragraph 86), which reads on the claimed, "determining whether the first power or the second power is a smaller power requirement; and assigning by the RNC the one user equipment to the broadcast channel, if the first power is the smaller power requirement or assigning the one user equipment to the dedicated channel, if the second power is the smaller power requirement."

Regarding **claim 20**, the combination of Sinnarajah et al and Yano et al fails to expressly disclose that if the one user equipment is assigned to the broadcast channel and power is available and the one user equipment is outside a current coverage area for the broadcast channel, there is further included the step of increasing the first power of the broadcast channel for the one user equipment according to $P_b(K) = P_b(K) + P_{db}(i)$.

In a similar field of endeavor, Chen et al discloses that the power is adjusted to satisfy the requirement of the subscriber station that reports the worst quality metric (see paragraph 66), which reads on the claimed, "if the one user equipment is assigned to the broadcast channel and power is available and the one user equipment is outside a current coverage area for the broadcast channel, there is further included the step of increasing the first power of the broadcast channel for the one user equipment according to $P_b(K)=P_b(K)+P_{db}(i)$."

It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify the combination of Sinnarajah et al and Yano et al with Chen et al to include the above increasing of power in order to adequately cover all stations while minimizing interference.

Regarding **claim 21**, the combination of Sinnarajah et al, Yano et al and Chen et al inherently provides support for the limitation of, "if the first power of the broadcast channel is increased there is further included a step of decreasing the available power for the MBMS service according to $P_{b,avail}=P_{db}(i)$," as a person of ordinary skill in the art would recognize that there is a finite amount of power available and therefore increasing the power used would necessarily decrease the power available.

Regarding **claim 22**, Sinnarajah et al disclose that a base station receives a pilot strength report message indicating that the subscriber station is receiving stronger signals from another base station and the new base station provides the broadcast information while the old base station stops transmission (see paragraphs 96-98), which reads on the claimed, "setting a new coverage threshold," wherein the broadcast being

provided in a new area or not being provided in an old area implies the coverage has changed. Sinnarajah et al fail to disclose using the signal/noise of the pilot signal corresponding to the one user equipment.

In a similar field of endeavor, Yano et al disclose a terminal measuring the signal-to-noise ratio on the basis of the received power of the pilot signal and transmitting this to the base station (see column 9, lines 36-47).

It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify Sinnarajah et al with Yano et al to include the above use of the signal-to-noise ratio of the pilot signal in order to assure the communication quality of each terminal as suggested by Yano et al (see column 6, lines 9-36). The combination of Sinnarajah et al and Yano et al fails to expressly disclose that the steps of transmitting, assigning and assigning are performed by a radio network controller of the mobile communication system.

In a similar field of endeavor, Chen et al disclose that a control unit may be located at the individual sector or at the controller and determines the transmit level (see paragraph 65), which reads on the claimed, "the steps of transmitting, assigning, and assigning are performed by a radio network controller of the mobile communication system."

It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify the combination of Sinnarajah et al and Yano et al with Chen et al to include the above steps performed at the RNC in order to save resources at the base station.

Regarding **claim 24**, the combination of Sinnarajah et al, Yano et al and Chen et al inherently provides support for the limitation of if the first power of the broadcast channel is greater than an available MBMS power, increasing by the RNC the first power on the broadcast channel according to $P_b(K) = P_b(K) + P_{b,avail}$; and decreasing the available MBMS power according to $P_{b,avail} + 0$, as one of ordinary skill in the art would recognize that there is only a limited amount of power available from the base station, and the power can not be increased after this maximum is being transmitted.

Regarding **claim 25**, Sinnarajah et al disclose that a base station receives a pilot strength report message indicating that the subscriber station is receiving stronger signals from another base station and the new base station provides the broadcast information while the old base station stops transmission (see paragraphs 96-98), which reads on the claimed, "setting a new coverage threshold," wherein the broadcast being provided in a new area or not being provided in an old area implies the coverage has changed. Sinnarajah et al fail to disclose using the signal/noise of the pilot signal corresponding to the one user equipment.

In a similar field of endeavor, Yano et al disclose a terminal measuring the signal-to-noise ratio on the basis of the received power of the pilot signal and transmitting this to the base station (see column 9, lines 36-47).

It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify Sinnarajah et al with Yano et al to include the above use of the signal-to-noise ratio of the pilot signal in order to assure the communication quality of each terminal as suggested by Yano et al (see column 6, lines 9-36). The combination

Art Unit: 2686

of Sinnarajah et al and Yano et al fails to expressly disclose that a radio network controller of the mobile communication system performs the steps of transmitting, assigning and assigning.

In a similar field of endeavor, Chen et al disclose that a control unit may be located at the individual sector or at the controller and determines the transmit level (see paragraph 65), which reads on the claimed, "the steps of transmitting, assigning, and assigning are performed by a radio network controller of the mobile communication system."

It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify the combination of Sinnarajah et al and Yano et al with Chen et al to include the above steps performed at the RNC in order to save resources at the base station.

Claims 23 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sinnarajah et al in view of Yano et al and Chen et al as applied to claim 22 above, and further in view of what was well known in the art (see MPEP 2144.03).

Regarding **claim 23**, the combination of Sinnarajah et al, Yano et al and Chen et al discloses that the new base station broadcasts the content and the old base station ceases to send the content (see Sinnarajah et al paragraphs 96-98), which reads on the claimed, assigning the user equipment to the broadcast channel and, "broadcasting the new coverage threshold to the plurality of user equipments." The combination of

Sinnarajah et al, Yano et al and Chen et al fails to expressly disclose that the RNC does the assignment.

The examiner takes official notice that the RNC assigning a channel was well known to a person of ordinary skill in the art at the time of the invention.

It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify the combination of Sinnarajah et al, Yano et al and Chen et al to include the above assigning of channels at the RNC in order to save resources at the base station.

Regarding **claim 26**, the combination of Sinnarajah et al, Yano et al and Chen et al discloses that the new base station broadcasts the content and the old base station ceases to send the content (see Sinnarajah et al paragraphs 96-98), which reads on the claimed, assigning the user equipment to the broadcast channel and, "broadcasting the new coverage threshold to the plurality of user equipments." The combination of Sinnarajah et al, Yano et al and Chen et al fails to expressly disclose that the RNC does the assignment.

The examiner takes official notice that the RNC assigning a channel was well known to a person of ordinary skill in the art at the time of the invention.

It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify the combination of Sinnarajah et al, Yano et al and Chen et al to include the above assigning of channels at the RNC in order to save resources at the base station.

Claims 27 and 31-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sinnarajah et al in view of McGowan et al (US 20040106423A1).

Regarding **claim 27**, Sinnarajah et al disclose that a base station receives a request from a subscriber station to continue receiving the same broadcast content (see paragraph 90), which reads on the claimed, “power allocation and user assignment method for multimedia broadcast multicast services in a mobile communication system between one user equipment of a plurality of user equipments and a radio network controller,” and, “requesting by the one user equipment coupling to the MBMS services.” The base station connects the subscriber unit to either a shared broadcast channel or an individual broadcast channel in order to conserve power, for example (see paragraph 86). Sinnarajah et al disclose transmitting a power strength report message of the pilot signal from the subscriber station (see paragraph 96), which reads on the claimed, “transmitting a pilot signal to the one user equipment.” Sinnarajah et al fail to expressly disclose measuring a signal/noise of a pilot signal by the one user equipment to the mobile communication system.

In a similar field of endeavor, McGowan et al disclose that a mobile station compares the signal-to-noise ratio measured for a received signal to the signal-to-noise of a threshold (see paragraph 32), and an initial signal-to-noise threshold value can be transmitted to the mobile station via the BTS (see paragraph 42).

It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify Sinnarajah et al with McGowan et al to include the above comparing of signal-to-noise ratio at the mobile station and transmitting of a threshold to

the user in order to improve the power control as suggested by McGowan et al (see paragraph 9).

Regarding **claim 31**, Sinnarajah et al disclose the base station connects the subscriber unit to either a shared broadcast channel or an individual broadcast channel in order to conserve power, for example (see paragraph 86). Sinnarajah et al fails to disclose the use of the S/N of the pilot signal.

In a similar field of endeavor, McGowan et al disclose that a mobile station compares the signal-to-noise ratio measured for a received signal to the signal-to-noise of a threshold (see paragraph 32), and an initial signal-to-noise threshold value can be transmitted to the mobile station via the BTS (see paragraph 42).

It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify Sinnarajah et al with McGowan et al to include the above comparing of signal-to-noise ratio at the mobile station and transmitting of a threshold to the user in order to improve the power control as suggested by McGowan et al (see paragraph 9).

Regarding **claim 32**, Sinnarajah et al disclose the base station connects the subscriber unit to either a shared broadcast channel or an individual broadcast channel in order to conserve power, for example (see paragraph 86). Sinnarajah et al fails to disclose the use of the S/N of the pilot signal.

In a similar field of endeavor, McGowan et al disclose that a mobile station compares the signal-to-noise ratio measured for a received signal to the signal-to-noise

of a threshold (see paragraph 32), and an initial signal-to-noise threshold value can be transmitted to the mobile station via the BTS (see paragraph 42).

It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify Sinnarajah et al with McGowan et al to include the above comparing of signal-to-noise ratio at the mobile station and transmitting of a threshold to the user in order to improve the power control as suggested by McGowan et al (see paragraph 9).

Regarding **claim 33**, Sinnarajah et al disclose the base station connects the subscriber unit to either a shared broadcast channel or an individual broadcast channel in order to conserve power, for example (see paragraph 86). Sinnarajah et al fails to disclose the use of the S/N of the pilot signal.

In a similar field of endeavor, McGowan et al disclose that a mobile station compares the signal-to-noise ratio measured for a received signal to the signal-to-noise of a threshold (see paragraph 32), and an initial signal-to-noise threshold value can be transmitted to the mobile station via the BTS (see paragraph 42).

It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify Sinnarajah et al with McGowan et al to include the above comparing of signal-to-noise ratio at the mobile station and transmitting of a threshold to the user in order to improve the power control as suggested by McGowan et al (see paragraph 9).

Regarding **claim 34**, Sinnarajah et al disclose the base station connects the subscriber unit to either a shared broadcast channel or an individual broadcast channel

in order to conserve power, for example (see paragraph 86). Sinnarajah et al fails to disclose the use of the S/N of the pilot signal.

In a similar field of endeavor, McGowan et al disclose that a mobile station compares the signal-to-noise ratio measured for a received signal to the signal-to-noise of a threshold (see paragraph 32), and an initial signal-to-noise threshold value can be transmitted to the mobile station via the BTS (see paragraph 42).

It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify Sinnarajah et al with McGowan et al to include the above comparing of signal-to-noise ratio at the mobile station and transmitting of a threshold to the user in order to improve the power control as suggested by McGowan et al (see paragraph 9).

Claims 28-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sinnarajah et al in view of McGowan et al as applied to claim 27 above, and further in view of Chen et al.

Regarding **claim 28**, the combination of Sinnarajah et al and McGowan et al fails to disclose determining by the user equipment whether a timer has expired, and, if the timer is expired, performing the steps of requesting, transmitting, measuring, receiving and comparing.

In a similar field of endeavor, Chen et al discloses a system where an access attempt is performed by sending a series of access probes by the subscriber station, each access probe at a higher power level (see paragraph 49).

It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify the combination of Sinnarajah et al and McGowan et al with Chen et al to include the above repeating of the access attempt at a higher power level in order to conserve power by beginning communication at the lowest power level necessary.

Regarding **claim 29**, the combination of Sinnarajah et al, McGowan et al and Chen et al discloses a series of access probes, fulfilling the limitation of resetting the timer.

Regarding **claim 30**, Sinnarajah et al fail to expressly disclose if the timer is expired and if the S/N measured by the one user equipment is less than the S/N of the coverage threshold there is further included a step of transmitting the measured S/N of the pilot signal to the RNC.

In a similar field of endeavor, McGowan et al disclose that a mobile station compares the signal-to-noise ratio measured for a received signal to the signal-to-noise of a threshold (see paragraph 32), and an initial signal-to-noise threshold value can be transmitted to the mobile station via the BTS (see paragraph 42).

It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify Sinnarajah et al with McGowan et al to include the above use of signal-to-noise ratio in order to improve the power control as suggested by McGowan et al (see paragraph 9). The combination of Sinnarajah et al and McGowan fails to disclose transmitting the S/N of the pilot signal to the RNC.

In a similar field of endeavor, Chen et al disclose that a control unit may be located at the individual sector or at the controller and determines the transmit level (see paragraph 65) and the quality information may be the signal strength or quality of both the pilot channel and the forward link broadcast channel. This is done after the station is connected and therefore after the timer has expired.

It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify Chen et al to use the signal to interference and noise ratio of the pilot signal in order to use specify the quality metric of the pilot signal to use.

Allowable Subject Matter

Claim 7 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: The closest prior art applied, Chen et al in view of Kitazawa et al and Sinnarajah et al discloses a power control method in a point-to multipoint service (see Chen et al paragraphs 22-23). There may be a field indicating the strength or quality of both the forward link broadcast channel and the pilot channel (see Chen et al paragraph 81). The sector adjusts the forward link shared channel to satisfy the power requirement of the subscriber station which reports the worst forward link quality metric (see Chen et al paragraph 66). A user accesses the system via an access probe, and base stations transmit the received information on a forward shared channel to the users in the group that are assigned to monitor the channel (see Chen et al paragraphs 49-51). Each

sector receives feedback information from the member subscriber stations in the sector's coverage area and adjusts the transmit level to ensure that the desired quality of service is delivered to all the member subscriber stations by determining the transmit level, and this can be done by a control unit located at the controller (see Chen et al paragraph 65).

The prior art applied fails to teach, suggest or render obvious determining a number K with the equation specified in the claim.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Kim et al (US 20030119452A1) disclose an apparatus and method for controlling transmission power of downlink data channel in a mobile communication system supporting MBMS.

Willeneggar et al (US 20030207696A1) disclose a multi-media broadcast and multicast service in a wireless communication system.

Grob et al (US005881368A) disclose a method and apparatus of power control in a CDMA dispatch system.

Myers, Jr. (US006023625A) disclose a system and method for reducing multicast interference in a distributed antenna network.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Bryan J Fox whose telephone number is (571) 272-7908. The examiner can normally be reached on Monday through Friday 9-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marsha Banks-Harold can be reached on (571) 272-7905. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Bryan Fox
August 5, 2005



CHARLES APPIAH
PRIMARY EXAMINER